Message

From: Fennessy, Christopher [christopher.fennessy@Rocket.com]
Sent: 5/8/2017 10:57:24 PM
To: Keller, Lynn [Keller.Lynn@epa.gov]
Subject: RE: May 10

Ok. Very important for me to get moving on next steps, if any, as quickly as possible. Thanks!

Christopher M. Fennessy, P.E.
Aerojet Rocketdyne, Inc.
Engineering Manager, Site Remediation
11260 Pyrites Way, Suite 125
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Ph: 916-355-3341
Fax: 916-355-6145
Email: Christopher.Fennessy@Rocket.com

From: Keller, Lynn [mailto:Keller.Lynn@epa.gov]
Sent: Monday, May 08, 2017 3:55 PM
To: Fennessy, Christopher
Subject: [EXTERNAL] Re: May 10

If not the 11th than the 12th. The next few days are pretty booked with meetings but i'm sure at least you and I can catch up.

Sent from my iPhone

On May 8, 2017, at 15:28, Fennessy, Christopher <christopher.fennessy@Rocket.com> wrote:

> Ok. Will you still call mon on the 11th to run down the discussion and next steps?
>
> **Christopher M. Fennessy, P.E.**
> **Aerojet Rocketdyne, Inc.**
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> **From:** Keller, Lynn [mailto:Keller.Lynn@epa.gov]
> **Sent:** Monday, May 08, 2017 3:26 PM
> **To:** Fennessy, Christopher
> **Subject:** [EXTERNAL] Re: May 10

Hi, Chris. Yes-thank you for the info; it was helpful. We'll just keep it to EPA folk for Weds-we all need to get on the same page first. We can follow up with questions to you or a conference call with you though.
Thank you,
Lynn

On May 8, 2017, at 13:18, Fennessy, Christopher <christopher.fennessy@Rocket.com> wrote:

> Hi Lynn – Was this information helpful? Would you like me to participate (portion or entire) in your May 10 meeting? Chris
>
> **Christopher M. Fennessy, P.E.**
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> **From:** Fennessy, Christopher
> **Sent:** Monday, May 01, 2017 3:14 PM
> **To:** 'Keller, Lynn'
> **Cc:** Stralka, Daniel; Plate, Mathew
> **Subject:** RE: May 10
>
> Sure. Just let me know if I can help further. See below for the answers to the questions:
>
> **Christopher M. Fennessy, P.E.**
> **Aerojet Rocketdyne, Inc.**
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>
> **From:** Keller, Lynn [mailto:Keller.Lynn@epa.gov]
> **Sent:** Monday, May 01, 2017 2:04 PM
> **To:** Fennessy, Christopher
> **Cc:** Stralka, Daniel; Plate, Mathew
> **Subject:** [EXTERNAL] RE: May 10

Hi, Chris.
Thanks for the offer; we only have one hour to meet due to schedules on the 10th (currently 11-12), but let me check with Dan and Matt. Dan and Matt, please let me know if it would be helpful to have Chris attend part or all of our Area 40 meeting, or if you'd rather keep this one internal and schedule another call with Chris.

Dan sent over some questions on Area 40; could you please provide additional info/clarification on these at your earliest convenience to help us discuss internally? I believe the answer to number 4 is no, and both Pete MacNicholl (DTSC) and I have expressed similar concerns as Dan in #5:

> Looking over the HHRA and the FS I have a few thoughts questions.
> Yes, they finalized the HHRA with their J&E calculation for soil vapor but it still shows significant risk in the area which are addressed in the FS, however,
>
> 1. Can we get Chris to plot the soil gas values compared to the California modified residential VISLs? What he did previously on the whole site compared to commercial levels. If we use the residential VISLs, I don't think they have the extent defined. In the information I included in my April 19 e-mail, I included a map (Area 40 soil vapor.pdf – attached to this e-mail for ease of access) that color codes subsurface soil gas samples based upon a residential indoor air TCE concentration of 0.48ug/m3 with a 0.03 attenuation factor across the slab. This value is 16ug/m3. Assuming no attenuation of TCE from 10 or 20 feet below ground surface where the sample was collected to the sub-slab adds a layer of conservatism. This map shows that the TCE is defined to the north, east, and south by locations that do not contain TCE at concentrations above 16ug/m3.
> 2. There is perchlorate but no mention of NDMA. Is there any or was it looked for? There is a reference to NDMA for gw as a COC in the FS. NDMA is not a significant chemical of concern at Area 40. Sixty-three soil samples were analyzed for NDMA. It was not detected in any soil samples. Multiple groundwater samples were analyzed for NDMA. The highest NDMA concentration detected in Area 40 groundwater was 5.1ng/L.
> 3. If I use the gw contamination as an area of concern screen for VI, it would include proposed housing areas adjacent to both the north and south of area 40. Add in the 100' buffer and it is even larger. The Area 40 soil vapor.pdf map also shows the 5ug/L TCE line with a 100 foot buffer. This figure has the detailed land use map behind it so you can see the residential lots. The GW well map with TCE.pdf (attached to this e-mail for ease of access) I included in the same e-mail shows this same line with the monitoring wells color coded so you can evaluate the accuracy of the graphics. AR agrees that this line extends to the north into the residential area. All FS alternatives include the requirement to develop a land use covenant that requires the design, approval of design, and installation of the approved vapor mitigation remedy beneath all structures (park structures and residential structures).
> 4. I cannot fine any ambient air measurements for the area. Are there any? Ambient air samples have not been collected.
> 5. The ZVI wall addresses contamination after it is mobilized. What about addressing the source, potential DNAPL and vadose/soil contamination? The VI guidance would support going after the source. The FS

downplays the source term by relying on IC and engineering controls. I wouldn't suggest that the FS is downplaying the source term and relying on IC and engineering controls. The FS is designed to ensure that the remedy is appropriate for the future land use (open space). This land use was developed with the source area in mind, similar to a brownfield development, and as such it recognized the risks from this area and planned around those risks (of course the risks were evaluated based upon toxicity information 10 years ago). The land use plan has been approved and is adopted by the City of Folsom in their Folsom Sphere of Influence Master Plan. Our job is to ensure that the risks are adequately mitigated to prevent unacceptable exposure to these chemicals.

Understanding that the land use plan specifically identifies the area where the chemical concentrations are highest as Open Space (anticipated to be fenced off to discourage public access), thereby significantly reducing potential for risk to human health, remedial actions were only evaluated for mass removal and to prevent further impacts to groundwater. The following alternatives were evaluated:

- Alternative 2 (note: Alternative 1 is no action) - Injection of In-situ chemical oxidation (mass removal and reducing source area concentrations)
- Alternative 3 - Low permeability cover (eliminate future source area loading to groundwater)
- Alternative 4 - In-situ permeable reactive barrier down-gradient of the source (mass removal)
- Alternative 5 - Excavation of soil in the vicinity of the separation ponds (mass removal and reducing future releases to groundwater)

The 9 NCP criteria are objectively evaluated for each of these remedial alternatives. The FS does not select an alternative. AR is awaiting input on these alternatives from all the Agencies in order to refine them into several possibly acceptable alternatives.

Thank you,
Lynn

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From: Fennessy, Christopher [mailto:christopher.fennessy@Rocket.com]
Sent: Monday, May 01, 2017 1:01 PM
To: Keller, Lynn <Keller.Lynn@epa.gov>
Subject: May 10

Hi Lynn – Would it be helpful for me to orient everyone and give some background at the beginning of your Area 40 VI discussion? I could drop off after introduction if you feel you cannot openly discuss with me on phone. Just thought it might help if everyone

understood sources, land use plan, where chemicals are located, how we interpret the data, and the current FS alternatives.

If so, please let me know what time to call in.

Chris

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